

Figure 1. Depicted recombinant FAA (rFAA), produced from cloned partial cDNA of bovine FAA gene in *E. coli*, showing the comparative position of the segment corresponding to intact bovine FAA.

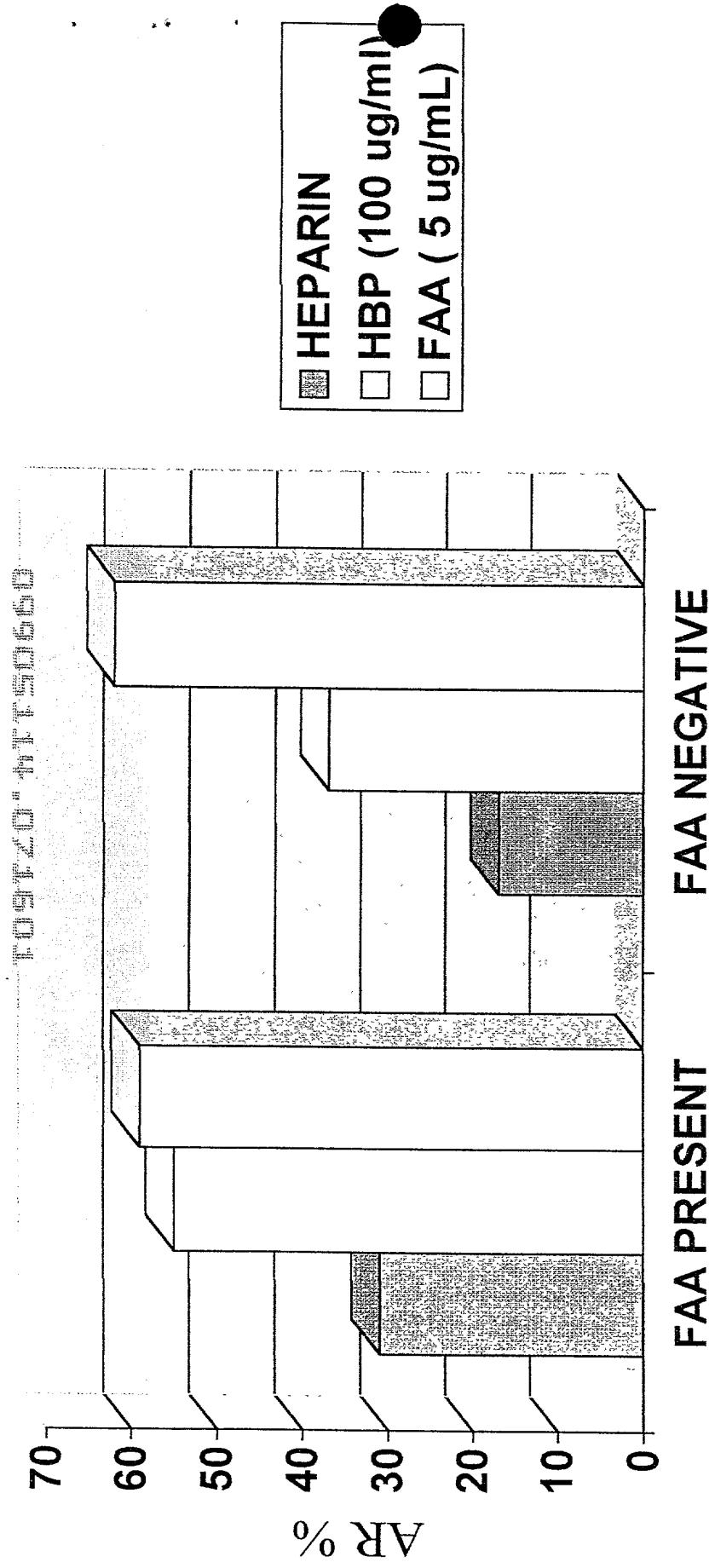


Figure 2. Percent increase in acrosome reaction for each treatment above the control level. FAA present represents a fertile bull with detectable FA on sperm and FAA negative represents a non-fertile bull without detectable FAA on sperm. The fertile bull (FAA present) reacted better to heparin induction of capacitation/acrosome reactions. Addition of FAA (5 ug/mL) stimulated maximum increase of acrosome reactions for each bull.

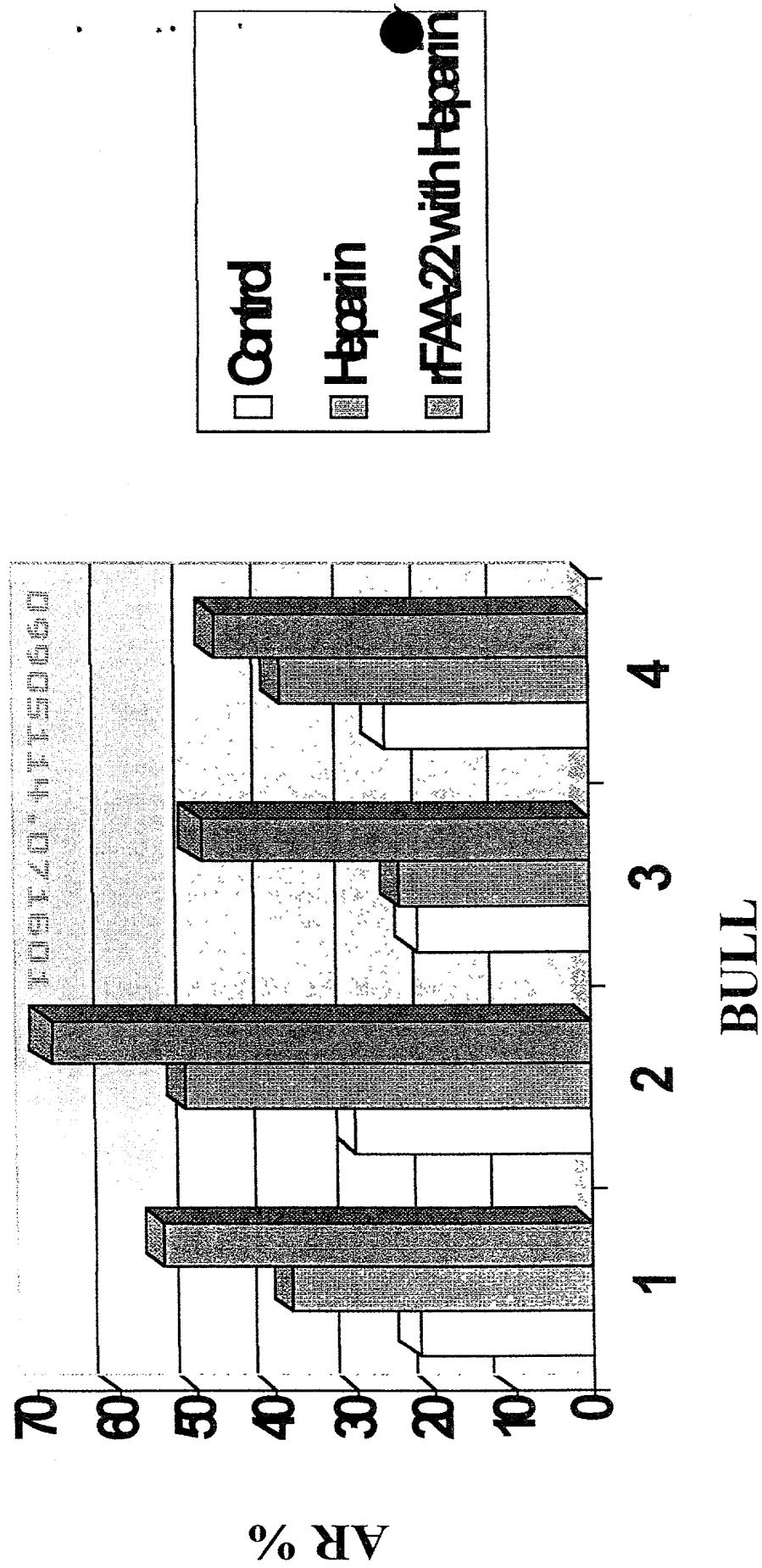


Figure 3. Effects of heparin alone (10 µg/ml) or recombinant FAA (rFAA, 20 µg/ml) with heparin to stimulate acrosome reaction in washed sperm from four fertile bulls.

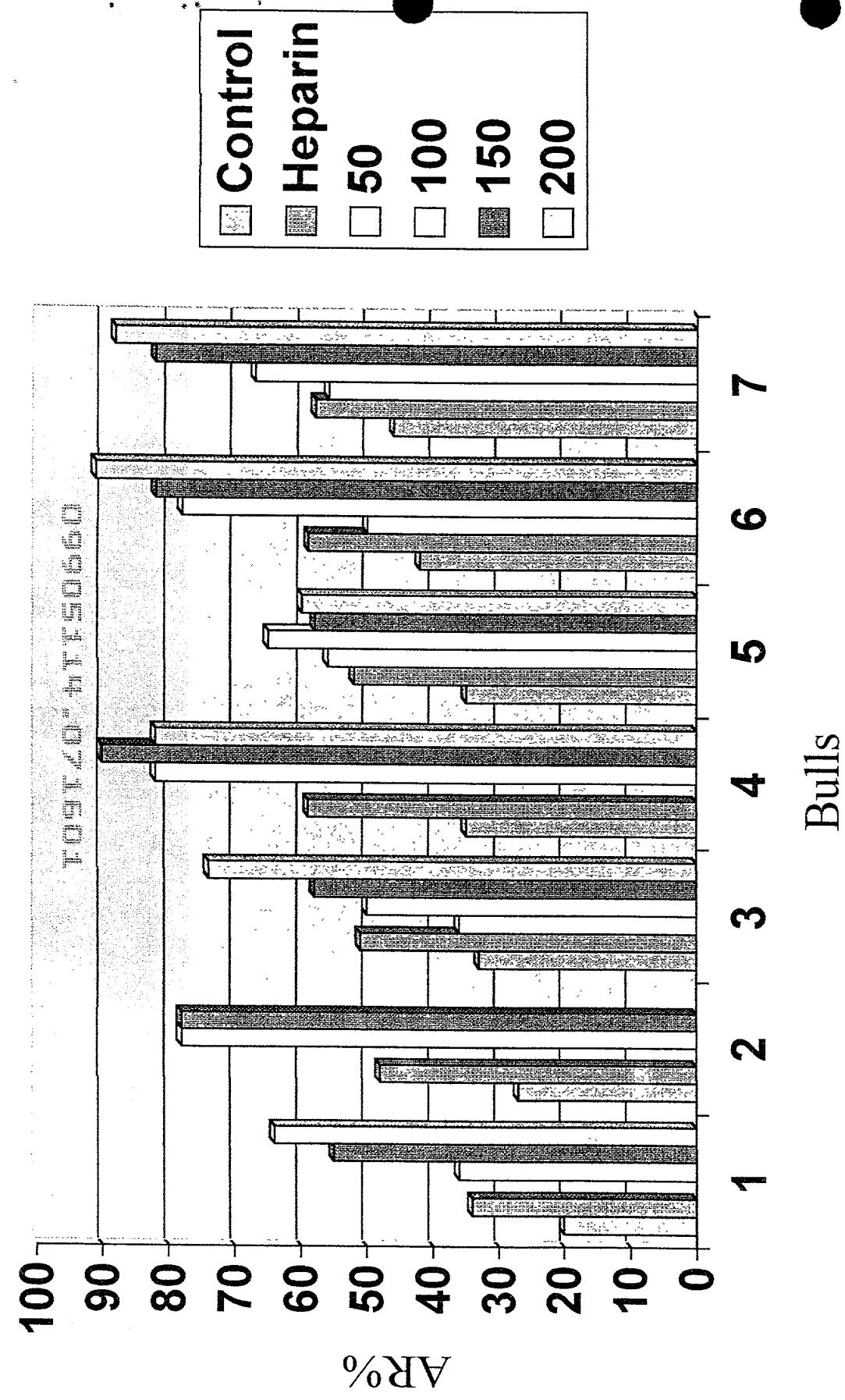


Figure 4. Dose-response comparisons ($\mu\text{g/ml}$) of the 22kDa recombinant FAA (rFAA) added with heparin ($10 \mu\text{g/ml}$) to washed sperm. Averages from two to five different ejaculates are presented as each datum point for each bull.

Thursday, July 06, 2000

1 ACAACAGGAT CTGCCCTATA CTGATGGAGA AGCTAACGG AAATTCAAGA
51 AAAGGCATAA CATAACAATA TGTGATTAGC TCTCGCCTTG GAAGAACAC
101 ATATAAAGAA CAGTATGCCT TTCTCTATAA AGAAAAGCTA GTGTCTGTAA
151 AACAAAGCTA CCTCTACCAC GACTATCAGG CTGGAGACGC AGATGTGTTT
201 TCCAGGGAAC CCTTTGTGGT CTGGTTCCAG TCACCCCTACA CCGCTGTCAA
251 GGACTTCGTG ATTGTCCCCC TGCACACCCAC CCCTGAGACAA TCCGTTAGAG
301 AGATTGATGA GCTGGCTGAT GTCTACACAG ATGTGAAACG TCGCTGGAAT
351 GCAGAGAATT TCATTTCAT GGGTGACTTC AATGCTGGCT GCAGCTACGT
401 CCCCAAGAAG GCCTGGAAGG ACATCCGCCT GAGGACGGAC CCCAAGTTCG
451 TTTGGCTGAT CGGGGACCAA GAGGACACCA CGGTCAAGAA GAGCACAAAC
501 TGCGCCTATG ACAGGATCGT GCTTAGAGGA CAAAATATTG TCAACTCTGG
551 TGGTCCTCAA TCAAACCTCG TCTTGATT CCAGAAAGCT TACAGGTTGT
601 CTGAATCGAA GGCCCTGGAT GTCAGCGACC ACTTTCCAGT TCATCATCAT
651 CATCATCATG AAGAACCATG A

Notes: Upstream primer sequence;

Codon sequence responsible for the rFAA product;

Stop codon.

Figure 6

5' GAGAAGCTAACCGAAATTCAAGAAAAGGCATAACATACAACATGTGATTAGCTCTCGC 60
1 a E K L N G N S R K G I T Y N Y V I S S R -
61 a CTTGGAAGAAACACATATAAGAACAGTATGCCTTCTCTATAAAGAAAAGCTAGTGTCT 120
a L G R N T Y K E Q Y A F L Y K E K L V S -
121 a GTAAAACAAAGCTACCTCTACCAACGACTATCAGGCTGGAGACGCAGATGTGTTTCCAGG 180
a V K Q S Y L Y H D Y Q A G D A D V F S R -
181 a GAACCCTTGTTGGTCTGGTCCAGTCACCCCTACACCGCTGTCAAGGACTTCGTGATTGTC 240
a E P F V V W F Q S P Y T A V K D F V I V -
241 a CCCCTGCACACCACCCCTGAGACATCCGTTAGAGAGATTGATGAGCTGGCTGATGTCTAC 300
a P L H T T P E T S V R E I D E L A D V Y -
301 a ACAGATGTGAAACGTCGCTGGAATGCAGAGAATTCATTTCATGGGTGACTTCAATGCT 360
a T D V K R R W N A E N F I F M G D F N A -
361 a GGCTGCAGCTACGTCCCCAAGAAGGCCTGGAAGGACATCCGCCTGAGGACGGACCCCAAG 420
a G C S Y V P K K A W K D I R L R T D P K -
421 a TTCGTTGGCTGATGGGGACCAAGAGGGACACCACGGTCAAGAAGAGCACAAACTGCGCC 480
a F V W L I G D Q E D T T V K K S T N C A -
481 a TATGACAGGATCGTGCTTAGAGGACAAATATTGTCAACTCTGGTGGTCCTCAATCAAAC 540
a Y D R I V L R G Q N I V N S G G P Q S N -
541 a CTCGTCTTGATTCCAGAAAGCTTACAGGTTGCTGAATCGAAGGCCCTGG 592 3'
a L V F D F Q K A Y R L S E S K A L -